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Canon

SPEEDLITE 188A



English Edition

Introduction

The Canon Speedlite 188A is an automatic, electronic, flash unit for hot-shoe attachment on the Canon A-series SLR cameras such as AE-1 PROGRAM or A-1, and F-1. The speedlite mounts onto the accessory shoe of the cameras for hot-shoe attachment.

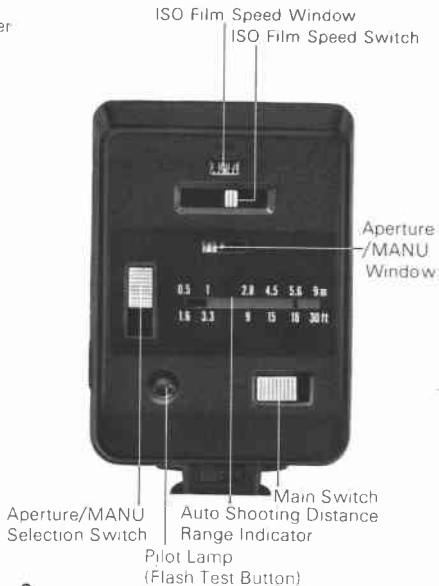
On the A-1, AE-1 PROGRAM, and AE-1, the 188A will set both the shutter speed and the aperture for the cameras set normally for automatic exposure. For the F-1, the 188A will set only the shutter speed or lens aperture as well depending on the exposure mode the camera is set for. For the AL-1, AV-1 and AT-1, the flash will set the shutter speed automatically while the aperture is set manually.

When the 188A is used with the AE-1 PROGRAM, a blitz "☺" mark lights up in the viewfinder when the flash is charged. After the shutter is released, the same display flashes on and off to indicate there was sufficient illumination for the shooting

distance. Thus you can concentrate on shooting and picture composition. You never have to take your eye away from the viewfinder.

For the AE-1 PROGRAM as well as for other A-series SLRs and the F-1, a unique average light measuring system ensures attaining better overall exposure.

Another feature of the 188A is that while you are waiting for the flash to recycle, the camera's normal automatic exposure function is retained and you can shoot using existing light. Of course, for insufficient light slow shutter speed is required and long exposures may be suitable only when there is no motion to be stopped.

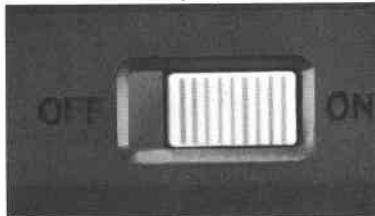


Summary for Use of the 188A

- 1** Load the batteries correctly.



- 5** Set the 188A's main switch to ON, and focus on the subject.



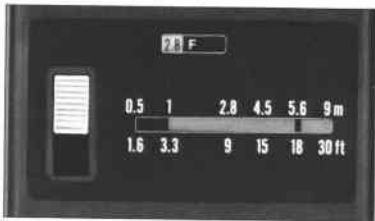
- 2** Set the ISO film speed.



- 6** Wait for the pilot lamp to glow.



3 Select an aperture.



4 Mount the 188A on the camera.



7 Check viewfinder information, and press the shutter button.





Loading the Batteries

1. Use four new size AA alkaline-manganese (LR6/AM-3) or Ni-Cd batteries. Carbon-zinc batteries may also be used, but their battery life is shorter. Before loading the batteries, wipe their contacts and the flash contacts with a clean, dry cloth to prevent poor contact from dirt.
2. Press and slide the battery chamber cover off in the direction of the arrow in the photo.
3. Load the batteries so that their contacts are in the directions indicated by the diagram inside the battery chamber. For proper function of the flash, it is very important that their contacts be facing in the correct directions.
4. Once the batteries are loaded, slide the battery chamber cover back on while pressing the batteries down. Make sure the cover's tab fits into the corresponding groove on the flash body.

- * Remove the batteries if you do not expect to use the 188A for about three weeks or longer.
- * Set the main switch to OFF when flash photography is finished.
- * When the batteries become exhausted, replace all four at the same time with four new ones of the same brand.
- * Since battery performance deteriorates in low temperatures, keep the batteries warm until just before use. Keep a set of spare batteries warm and alternate them with the loaded ones so that warm batteries are always in use.
- * In temperatures below 0°C, the use of fully-charged Ni-Cd batteries is recommended. When recharging Ni-Cd batteries, follow the instructions of the battery manufacturer.
- * Each brand of Ni-Cd batteries has its own terminal system. Be sure to use a type which is suitable for this flash.

Setting the ISO Film Speed

To set the film speed, slide the ISO film speed switch until the ISO value of your film is aligned with the orange index. At this time, the aperture displayed in the Aperture/MANU window will also change. Because the guide number of the flash varies with the sensitivity of the film in use, be sure to set the ISO film speed correctly.

- * The number after ISO is the equivalent ASA number.



- Make sure that the camera is set to the correct ISO film speed.

It is possible to set the following ISO film speeds. Numbers in parentheses are intermediate film speeds indicated by the dots on the scale.

(32) (40) (64) (80) (125) (160)
 ISO25 • • 50 • • 100 • •
 (250) (320) (500) (640)
 200 • • 400 • • 800

Choosing an Aperture and Reading its Value

There is a choice of two apertures for automatic flash photography. To select an aperture, set the Aperture/MANU selection switch to the upper or middle position; the aperture value will appear in the Aperture/MANU window. The aperture will change depending on the setting of the ISO film speed. When ISO 100 film is used, for instance, the upper position is f/2.8 and the middle position is f/5.6.

When the Aperture/MANU selection switch is set on the lowest position, "MANU" appears in the window. As this indicates manual flash photography, automatic flash photography is impossible.

- In automatic flash photography, if the ISO film speed is set between graduations, such as 64 or 80, the aperture value indicated is between click-stops on the aperture ring. In the case of the F-1 (depending on its exposure mode), AL-1 or AV-1, set the lens' aperture ring to the click-stop of the larger aperture.

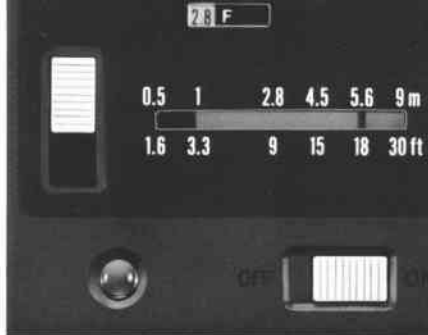


Reading the Auto Shooting Distance Range

Once you have selected an aperture by setting the Aperture/MANU selection switch to the upper or middle position, there is only a certain range of shooting distances which will give correct exposure. On the 188A, the correct shooting distance is indicated by the red and green lines in accordance with the selection of the aperture.

The break in the colored line indicates the maximum limits of the range, and the left range is effective when the Wide Adaptor 188A is attached.

Effective Shooting Distance Range	
Green Line	Red Line
0.5-4.5m; 1.6-15 ft. (0.5-2.8m; 1.6-9 ft.)	1-9m; 3.3-30 ft. (1-5.6m; 3.3-18 ft.)



(Numbers in parentheses indicate the range of correct shooting distances when the Wide Adaptor 188A is attached.)

After focusing, confirm the shooting distance on the lens' distance scale. Remember that correct exposure is impossible if the shooting distance is not within the effective shooting range.

Both depth of field and the shooting distance are factors to consider when selecting an aperture on the 188A. Use the following as guides:

Upper position: For isolating the subject from its surroundings by blurring the foreground and background. Also to be used when the subject distance is greater than 4.5m (15 ft.) (without Wide Adaptor 188A), or when camera-to-subject distance varies within the limits of the effective range.

Middle position: For the widest range of good focus in front of and behind the subject.

* Note that the auto shooting distance ranges remain the same regardless of the film speed.



Mounting the 188A on the Camera

1. Turn OFF the 188A's main switch.
2. Loosen the lock nut and insert the Speedlite into the camera's accessory shoe. For correct electrical contact, make sure it is pushed in all the way.
3. Retighten the lock nut.



Automatic Shutter Speed Setting

On the Canon F-1 (in Shutter-Priority AE mode), A-1, AE-1 PROGRAM, AL-1, AE-1, and AV-1, once the pilot lamp lights up (which means the flash is charged), the shutter speed switches to 1/60 sec. (1/90 sec. in the case of F-1) automatically except when the camera is set to "B." Setting the shutter speed is, therefore, unnecessary.

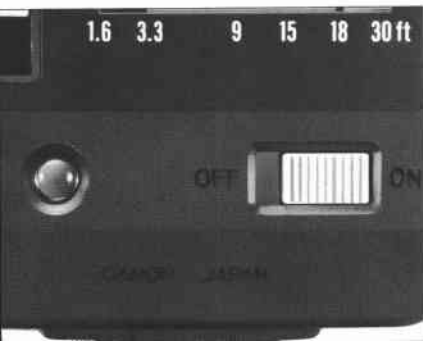
Automatic Aperture Setting

When the lens is set on "A," once the pilot lamp glows the aperture of the F-1 (in Shutter-Priority AE mode), A-1, AE-1 PROGRAM or AE-1 is set automatically to the same aperture chosen on the 188A with the Aperture/MANU selection switch. In the case of the AL-1, AV-1 and F-1 in aperture-priority AE mode and manual mode, turn the lens' aperture ring to the same aperture which is set on the 188A.

Main Switch and Pilot Lamp

Turn the main switch ON, and focus. The pilot lamp lights up when the flash is charged, telling you that it is possible to shoot.

The A-1 and AE-1 PROGRAM have special viewfinder displays which make it possible to confirm that the flash is charged. See p. 18 for details.



Test Firing

To test the flash for proper function, press the pilot lamp after it glows. If a flash is fired, the flash is in proper working order.

Confirming Exposure and Shooting

After focusing, check the lens' distance scale to make sure the shooting distance is within the auto distance range indicated by the red or green line on the flash. If it is not, either move closer to or farther away from the subject as required, or set the Aperture/MANU selection switch to a more appropriate position. After the pilot lamp lights up, press the shutter button halfway and confirm exposure information in the viewfinder. The indication varies depending on the camera (see pp.18-21). If everything is correct, confirm focusing and press the shutter button all the way for shutter release.

Reverting to Normal AE Photography Before the Recycling of the Flash When Using FD Lenses

All cameras listed in this instruction booklet except AT-1 provide one type or another of automation in exposure. Depending on the camera/lens settings (plus attachment of accessory in case of the F-1), either shutter priority, or aperture priority, or both are provided. This type of AE photography is preserved while you are waiting for the flash to recycle. It means camera reverts to normal AE photography between flash pictures until the pilot lamp comes on again and the camera switches over again to flash circuit. This arrangement makes possible for the photographer, if he desires, to depend on normal AE photography between flash pictures when there is no motion to be stopped. Use of slow shutter speed required for lowlight conditions may present some difficulties in hand-held shooting. Also, larger aperture opening will be required to cope

for lowlight condition. Therefore, it is all the more important to make sure that the aperture or shutter speed to which the camera is actually set for normal AE photography is appropriate for correct exposure as well as for ease in hand-held shooting should the photographer be compelled to make exposures before the flash charge is completed.

Switch OFF

Once flash is no longer necessary, be sure to turn OFF the 188A's main switch to prevent battery drain. With the main switch OFF, the circuit between the camera and flash is disconnected and it is possible to shoot normally even while the flash is attached to the camera.

Wide Adaptor 188A

This flash covers an angle of view as wide as that of a 35mm lens. When the Wide Adaptor 188A is attached, the 188A's flash angle is widened to cover the angle of view of a 28mm lens. To attach the Wide Adaptor, hook its tab into one of the grooves on either side of the flash head and push down on the other end of the adaptor until it snaps into place. To remove the adaptor, lift up on the protruding tab.

- * Remember that use of the Wide Adaptor 188A shortens the auto shooting distance range (see p. 9).



Normal Use with the F-1, A-1, AE-1 PROGRAM, AL-1, AE-1, and AV-1

The shooting modes are:

1. Full autoflash mode;
2. Automatic shutter setting autoflash mode; and
3. Manual flash mode.

Full Autoflash Photography

This is possible only on the A-1, AE-1 PROGRAM, AE-1 or F-1 (in Shutter-Priority AE mode) with an FD lens set on "A." Both the shutter speed and aperture are automat-

ically set on the camera when the pilot lamp glows. (Except when the camera is set to "B")

Automatic Shutter Setting Autoflash Photography

With the AL-1, AV-1, AT-1 or F-1 (in Aperture-Priority AE or Manual mode), although the shutter speed is set automatically, manually set the aperture which has been selected on the flash.

Mode	A-1, AE-1 PROGRAM, AE-1, F-1*	AL-1, AV-1, AT-1, F-1**
Full Autoflash	Yes. Main Mode.	No.
Automatic Shutter Setting Autoflash	Yes.	Yes. Main Mode.
Manual Flash	Yes.	Yes.

F-1 *: Shutter-Priority AE Mode

** : Manual or Aperture-Priority AE Mode

Because the aperture is set manually, this mode is especially useful when exposure correction is desired.

- With the A-1, AE-1 PROGRAM or AE-1, manual aperture setting is possible when using an FD lens. In this mode, the shutter speed is still switched automatically to 1/60 sec.
- If you turn the lens' aperture ring to the same aperture which was chosen on the flash, the result will be the same as if the aperture ring had remained on "A."

Automatic Shutter Setting

Autoflash with an FL Lens on the A-1, AE-1 PROGRAM, AE-1, AL-1, AV-1, AT-1 or F-1

FL lenses do not have the signal pin for full aperture metering and the aperture cannot be set automatically. The shutter speed, however, is switched automatically to X-sync. Turn the lens' aperture ring to the same aperture which is set on the flash.



Viewfinder Information and Warnings

After the pilot lamp lights up, press the shutter button halfway to activate the viewfinder information display. Viewfinder information and exposure warnings vary with the cameras.

- If the aperture selected on the flash is larger than the lens' maximum aperture you cannot take a correct exposure. On the A-1, the lens' maximum aperture will flash on and off to indicate underexposure. On the AE-1 PROGRAM, the preselected aperture on the flash will flash on and off. On the AE-1, the underexposure lamp blinks. On the F-1 (Shutter-Priority AE Mode), the meter needle points to the underexposure mark or below. In this case, set the Aperture/MANU selection switch to a smaller one.

A-1 Display

Full Autoflash Mode: FD lens on "A" and AT dial not on "B."

- "60" means the shutter speed is set to 1/60 sec., the "F" signal indicates the camera is ready for flash, and the aperture set on the flash will be displayed in the viewfinder.
- When the shutter speed is set on "B," "bu" will be displayed instead of "60"



Automatic Shutter Setting Autoflash Mode: FD lens off "A" and AT dial not on "B," or FL lens.

- In addition to the above-mentioned displays in automatic shutter setting autoflash mode, "M," reminding you that you have taken the aperture ring off "A," is displayed. Set the aperture as displayed in the viewfinder by hand.
- With the FL lens, the viewfinder display is not always reliable and should be switched OFF.



[Error in Display]

The aperture displayed may be one-half f/ stop off the one selected on the flash. This is because the aperture display is in one-half f/stop increments; it has no effect on actual exposure. The aperture display may also flash on and off if the flash-selected aperture is the same as the lens' maximum aperture. In this case, exposure will be correct, but it is advisable to check the flash-selected aperture to make sure it is not larger than the lens' maximum aperture.

AE-1 PROGRAM Display

Full Autoflash Mode: FD lens on "A" and shutter speed selector dial not on "B."

- The aperture selected on the flash and the "Ⓜ" mark indicating the flash is charged will be displayed. After the shutter is released, the "Ⓜ" mark will flash on and off for two seconds provided you continue to press the shutter

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button halfway and the subject was within the auto shooting distance range.

Automatic Shutter Setting Autoflash Mode: FD lens off "A" or FL lens.

- "Ⓜ" glows in addition to the above-mentioned displays. If, however, the auto-exposure confirmation mark flashes on and off in this mode, it does not confirm auto-exposure and should be disregarded.

Note: The aperture display may flash on and off in both modes if the flash-selected aperture is the same as the lens' maximum aperture. In this case, exposure will be correct.

AE-1 Display

Full Autoflash Mode: FD lens on "A" and Shutter dial not on "B."

- The meter needle swings to the aperture pre-selected on the 188A to assure correct exposure.

Automatic Shutter Setting Autoflash Mode: FD lens off "A" or FL lens.

The aperture selected on the 188A and "M" (for manual aperture control) flashing on and off are displayed.

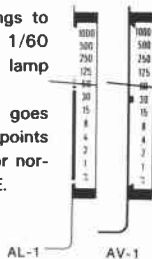


AL-1 and AV-1 Display

Automatic Shutter Setting Autoflash Mode: Selector dial not on "B."

- The meter needle swings to the shutter speed of 1/60 sec. once the pilot lamp glows.

When the pilot lamp goes out, the meter needle points to the shutter speed for normal aperture-priority AE.



AT-1 Display

Automatic Shutter Setting Autoflash Mode: Shutter dial not on "B."

- No viewfinder flash information.

F-1 Display

Full Autoflash Mode: Shutter-Priority AE Mode – With AE Motor Drive FN or AE Power Winder FN, FD lens on "A" and shutter dial not on "B."

- The meter needle points to the aperture pre-selected on the 188A.
- Shutter speed indicator shows the setting on the shutter speed dial, but shutter speed is automatically changed to X-sync. of 1/90 sec.



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Automatic Shutter Setting Autoflash Mode: Aperture-Priority AE or Manual Mode.

Manual Mode: shutter dial not on "B."

- In addition to the above-mentioned displays the aperture needle points to the aperture set on the aperture ring of the lens. Turn the lens' aperture ring to the same aperture set on the flash.



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Aperture-Priority AE Mode: With AE Finder FN, shutter dial on "A."

- The camera switches automatically to the X-sync. speed of 1/90 sec. and the meter needle points to the right of 1/60 sec.

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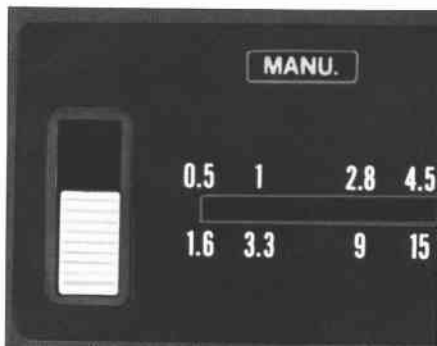
5.6

Precautions in Automatic Flash Modes

- * In some cases, automatic flash may not be suited to your subject. If, for instance, your main subject is small with a dark or distant background or if the subject's surroundings are bright white with strong reflections, automatic flash exposure may be affected by a contrasting background, causing under- or overexposure of the subject. This can be avoided by switching to manual flash (see pp.23-24).
- * In delayed flash with the camera's self-timer, do not press the shutter release button until the pilot lamp glows.
- * When the shooting distance is less than one meter, the difference between the optical axis of the lens and the flash may result in uneven flash distribution.
- * Since it is possible for viewfinder information in the F-1, AE-1, AL-1 or AV-1 to be the same in flash photography as in normal AE photography, it is advisable to check that the pilot lamp is glowing before shooting.
- * Confirmation of auto-exposure flash is not possible when the 188A is used with any A-series camera other than the AE-1 PROGRAM, and it is only possible in the full autoflash mode.
- * The auto-exposure confirmation signal tells you whether you are close enough to your subject but not whether you are far enough away. If you think you may be too close to your subject, check the lens' distance scale and the auto shooting distance range on the flash.

Manual Flash Photography

Setting the Aperture/MANU selection switch to the lowest position places the 188A in the manual flash mode. The automatic flash circuit is cut off, and both flash and camera are switched to regular synchronized flash photography. In this mode, the shutter speed of each A-series camera and F-1 are still switched automatically to the X-synchronization speed (unless the shutter speed is set on "B") when the pilot lamp glows. The aperture, however, must be calculated for each change in shooting



distance using the guide number of formula and then set manually on the lens' aperture ring. The procedure for manual flash photography is as follows:

1. Set the 188A's Aperture/MANU selection switch to the lowest position; "MANU" will appear in the Aperture/MANU window.
2. Make sure that the proper ISO film speed is set on the flash.
3. Focus the subject.
4. Read the shooting distance from the lens' distance scale.
5. Calculate the aperture using the following guide number formula:

$$\text{Aperture} = \frac{\text{guide number}}{\text{shooting distance}}$$

6. Set the aperture on the lens.
 7. Turn the main switch ON.
 8. Do not press the shutter button until the pilot lamp glows.
- * The 188A's guide number is 25 (ISO 100-m) or 41 (ISO 25-ft.).

- * Make sure that both the guide number and shooting distance are in the same unit, whether meters or feet.
- * The guide number changes with film speed. Paste the guide number table onto the 188A for convenient use.
- * If it is necessary to shoot immediately after the pilot lamp glows, open the lens 1/2 to one full f/stop. This correction is necessary because the flash is not yet fully charged when the pilot lamp glows.

Viewfinder Information on Manual Flash

1. F-1

The aperture needle points to the aperture set on the lens.

2. A-1

Shutter speed of 1/60 sec. (or "bu" when set to "B"), the "F" flash signal, and "M" for manual aperture control will be displayed. There is no aperture display.

3. AE-1 PROGRAM

The "Ⓜ" mark indicating the flash is charged and "M" for manual aperture control will be displayed. There is no aperture display.

4. AE-1

The only information will be the flashing "M" signal to indicate manual aperture control. The meter needle will swing to its upper limit.

5. AL-1 and AV-1

The meter needle will swing to the shutter speed of 1/60 sec. (unless selector dial is on "B").

Use of the 188A on Other Cameras

The Speedlite 188A can be used on other cameras which have a hot shoe in either the automatic flash mode or the manual flash mode. In either case, set the shutter speed to the camera's X-synchronization speed; the aperture also must be set manually. Refer to the camera's instruction book for further details.

1. In regular automatic flash photography, set the Aperture/MANU selection switch so that the red or green line appears in the window of the shooting distance range. Set the aperture on the lens. Provided the focused distance is within the auto shooting distance range, exposure will be correct.
2. In the case of manual flash photography, the procedure for calculating aperture value using the guide number formula is the same as for manual flash with A-series cameras (see p. 24).
3. When the 188A is used on a rangefinder camera with built-in flash automa-

tion (such as the Canonet G-III 17), the 188A's Aperture/MANU selection switch must be set to the lowest position so that "MANU" appears in the Aperture/MANU window. Follow the camera's instructions for setting the camera.

- * The Speedlite 188A cannot be used as a multiple flash.
- * A slave unit cannot be used with the 188A.



Care of the Flash

1. Remove the batteries if the flash will not be used for about three weeks or longer. During prolonged storage, occasionally load the batteries and make several test flashes to maintain proper function of the capacitor.
2. Since a high voltage circuit is built into the flash, it would be dangerous to try to take it apart by yourself. If repair is necessary, take it to the nearest authorized Canon service facility.
3. Do not drop the flash in water. If it is exposed to rain or snow, wipe it off with a dry cloth.
4. Do not leave the flash in direct sunlight or in hot, humid places.

Specifications

Type:

Electronic computer flash unit with a series control system.

Contact:

Clip-on type with direct contact and lock.

Guide Number:

25 (ISO 100-m) or 41 (ISO 25-ft.), 16 (ISO 100-m) or 26 (ISO 25-ft.) with Wide Adapter 188A. Reaches full charge 30 sec. after pilot lamp glows, with new batteries.

Flash Coverage Angle:

Covers a 35mm lens on the 35mm format. Covers a 28mm lens on the 35mm format when the Wide Adapter 188A is used.

Recycling Time:

(Interval between firing of flash and re-lighting of pilot lamp with new or fully-charged batteries):

Battery Type	Auto	Manual
Alkaline-manganese	Approx. 0.5~8 sec.	Approx. 8 sec.
Ni-Cd	Approx. 0.5~6 sec.	Approx. 6 sec.

Number of Flashes:

(When the flash is fired in 30 sec. intervals with new or fully-charged batteries):

Battery Type	Auto	Manual
Alkaline-manganese	Approx. 200~2000 times	Approx. 200 times
Ni-Cd	Approx. 70~700 times	Approx. 70 times

Color Temperature:

Same as daylight. Correction by special colored diffusion screen.

Flash Duration:

1/700 sec.~1/50000 sec.

Automatic Flash Control System:

Light reflected back from the subject is measured and the series control system saves unneeded energy. Averaged light measuring sensitivity distribution.

Aperture/MANU Selection Switch:

Three positions: Upper (red) and middle (green) auto positions and lower "MANU" (manual) position. With ISO/ASA 100 film, upper setting corresponds to f/2.8, middle setting to f/5.6.

Auto Shooting Distance Range:

Red setting: 1.0~9.0m (1.0~5.6m with Wide Adaptor 188A);

Green setting: 0.5~4.5m (0.5~2.8m with Wide Adaptor 188A).

ISO Film Speed Scale:

ISO 25 — ISO 800.

Aperture Scale:

f/1 ~ f/16.

Distance Scale:

0.5~9m (1.6~30 ft.).

Power Source:

Four Penlight (AA) alkaline-manganese (AM-3, LR6) or Ni-Cd batteries.

Pilot Lamp:

Comes on when unit sufficiently charged and effects automatic switch-over of camera to flash mode. No flash is fired if pilot lamp does not glow. Extinguishes when main switch OFF. Also functions as flash test button.

Flash Charge-completion Display:

With AE-1 PROGRAM: The "☑" mark lights up in the camera's viewfinder.

Auto-exposure Confirmation with AE-1 PROGRAM (Full Autoflash Mode):

By the "☑" mark flashing on and off in the camera's viewfinder for two seconds after shutter release. Confirms there was sufficient illumination for the shooting distance.

Dimensions:

68mm(W) x 52mm(L) x 103mm(H).
(2-11/16" x 2-1/16" x 4-1/16")

Weight:

290g (10-1/4 ozs.), including batteries.

Accessories:

Soft Case, Wide Adaptor 188A.

Subject to change without notice.

Canon

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